What is claimed is:

1. An improved apparatus for forming sheet glass, wherein the apparatus includes an inflow pipe for delivering molten glass, a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, and wherein the improvement comprises:

a downcomer pipe inserted vertically downward into an end of the inflow pipe opposite the trough, wherein a bottom of the downcomer pipe comprises at least one downward extension, which produces a controlled vortex flow of at least a portion of a glass stream exiting the downcomer pipe, directing at least a portion of the glass stream into a specific location.

2. The apparatus of claim 1, wherein a top of the inflow pipe comprises at least one radial extension corresponding to the downward extension of the bottom of the downcomer pipe.

3. The apparatus of claim 1, wherein the bottom of the downcomer pipe comprises a plurality of curved extensions, wherein the curved extensions project into the inflow pipe.

4. The apparatus of claim 3, wherein each of the curved extensions divides a single vortex of glass flow into two vortices such that glass exiting the vortices is directed to at least one unusable edge of the sheet.

5. The apparatus of claim 3, wherein the curved extensions comprise a plurality of V-shaped extensions.

6. The apparatus of claim 5, wherein the curved extensions comprise three V-shaped extensions.

7. The apparatus of claim 5, wherein the curved extensions comprise two V-shaped extensions.

8. The apparatus of claim 1, wherein the bottom of the downcomer pipe comprises a single V-shaped extension.

9. The apparatus of claim 1, wherein each extension divides a single vortex of glass into two vortices such that glass exiting the vortices is directed to at least one unusable edge of the sheet.

10. The apparatus of claim 1, wherein the bottom of the downcomer pipe is submerged in a glass free surface in the inflow pipe.

11. The apparatus of claim 1, wherein the bottom of the downcomer pipe is located substantially above a glass free surface in the inflow pipe.

12. The apparatus of claim 1, wherein the bottom of the downcomer pipe is partially submerged in a glass free surface in the inflow pipe.

13. The apparatus of claim 1, wherein a centerline of the downcomer pipe is not centered with a centerline of the inflow pipe.

14. The apparatus of claim 1, wherein the bottom of the downcomer pipe is cut at an angle to a centerline of the downcomer pipe.

15. The apparatus of claim 14, wherein the centerline of the downcomer pipe is not centered with a centerline of the inflow pipe.

16. The apparatus of claim 1, wherein the improvement further comprises at least one thermocouple that measures a temperature of the molten glass, wherein the thermocouple is immersed in at least one location directly in a path of molten glass flow, and wherein the location of the thermocouple is such that the thermocouple does not have an adverse effect on a quality of a finished glass sheet.

17. The apparatus of claim 16, wherein the apparatus further comprises a bowl inlet pipe for receiving molten glass from a stirring device, a bowl for receiving the molten glass from the bowl inlet pipe, and delivering the molten glass to the downcomer pipe, wherein the location of the thermocouple is selected from the group consisting of:

a) the bowl inlet pipe;

b) the bowl;

c) the downcomer pipe;

d) the inflow pipe;

e) a bottom centerline of the trough; and

f) any combination of a) through e).

18. A method for manufacturing glass sheets using an apparatus that includes a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, wherein the method comprises the step of:

altering a flow path of at least a portion of a molten glass stream, wherein a bottom of a downcomer pipe comprises at least one downward extension, which produces a controlled vortex flow of at least a portion of the glass stream exiting the downcomer pipe, directing at least a portion of the glass stream into a specific location.

19. The method of claim 18, wherein a top of the inflow pipe comprises at least one radial extension corresponding to the downward extension of the bottom of the downcomer pipe.

20. The method of claim 18, wherein the bottom of the downcomer pipe comprises a plurality of curved extensions, wherein the curved extensions project into the inflow pipe.

21. The method of claim 20, wherein each of the curved extensions divides a single vortex of glass flow into two vortices such that glass exiting the vortices is directed to at least one unusable edge of the sheet.

22. The method of claim 20, wherein the curved extensions comprise a plurality of V shaped extensions.

23. The method of claim 22, wherein the curved extensions comprise three V-shaped extensions.

24. The method of claim 22, wherein the curved extensions comprise two V-shaped extensions.

25. The method of claim 18, wherein the bottom of the downcomer pipe comprises a single V-shaped extension.

26. The method of claim 18, wherein each extension divides a single vortex of glass flow into two vortices such that glass exiting the vortices is directed to at least one unusable edge of the sheet.

27. The method of claim 18, wherein the bottom of the downcomer pipe is submerged in a glass free surface in the inflow pipe.

28. The method of claim 18, wherein the bottom of the downcomer pipe is located substantially above a glass free surface in the inflow pipe.

29. The apparatus of claim 18, wherein the bottom of the downcomer pipe is partially submerged in a glass free surface in the inflow pipe.

30. The method of claim 18, wherein a centerline of the downcomer pipe is not centered with a centerline of the inflow pipe.

31. The method of claim 18, wherein the bottom of the downcomer pipe is cut at an angle to a centerline of the downcomer pipe.

32. The method of claim 31, wherein the centerline of the downcomer pipe is not centered with a centerline of the inflow pipe.

33. An improved apparatus for forming sheet glass, wherein the apparatus includes an inflow pipe for delivering molten glass, a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, and wherein the improvement comprises:

a bead guide located below a bottom of the trough that minimizes a formation of beads at each end of the glass sheet, comprising a portion that contacts the molten glass as it travels over the bead guide, such that a contraction of a width of a molten glass sheet is minimized as it moves downward over the bead guide.

34. The apparatus of claim 33, further comprising a variable external cross-section of the wedge shaped sheet forming structure.

35. The apparatus of claim 33, further comprising a heater operatively connected to the bead guide.

36. The apparatus of claim 35, wherein the heater comprises a platinum sheet wrapped around a portion of the bead guide.

37. The apparatus of claim 36, wherein the heater further comprises a plurality of electrical connections attached to the platinum sheet.

38. The apparatus of claim 33, wherein the bead guide comprises a wedge-shaped portion such that the glass sheet attaches to and travels over a front of the wedge-shaped portion of the bead guide.

39. The apparatus of claim 38, wherein a top of the wedge-shaped portion is rounded.

40. The apparatus of claim 33, wherein a bottom of the bead guide is angled away from a center of the glass sheet.

41. The apparatus of claim 33, wherein the bead guide comprises a rotating disk.

42. The apparatus of claim 41, wherein a rotation of the rotating disk actively pulls glass from a center of the sheet towards a beading area on the edges of the sheet.

43. The apparatus of claim 41, wherein the bead guide further comprises a shaft, connected to the rotating disk on a first end, and connected to a chamber housing the wedge shaped forming structure on a second end.

44. The apparatus of claim 41, wherein a width of the glass sheet increases as it passes over the bead guide.

45. The apparatus of claim 33, wherein the beads have a thickness less than a useable portion of the glass sheet.

46. The apparatus of claim 33, wherein a width of the glass sheet remains substantially constant as the glass sheet travels over the bead guide.

47. An improved apparatus for forming sheet glass, wherein the apparatus includes a trough inflow pipe for delivering molten glass, a trough for receiving molten glass from the inflow pipe that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, and wherein the improvement comprises:

at least one thermocouple that measures a temperature of the molten glass, wherein the thermocouple is immersed in at least one location directly in a path of molten glass flow, and wherein the location of the thermocouple is such that the thermocouple does not have an adverse effect on a quality of a finished glass sheet.

48. The apparatus of claim 47, wherein the apparatus further comprises a bowl inlet pipe for receiving molten glass from a stirring device, a bowl for receiving the molten glass from the bowl inlet pipe, and a downcomer pipe for receiving the molten glass from the bowl, wherein the downcomer pipe delivers molten glass to the

trough inflow pipe, wherein the location of the thermocouple is selected from the group consisting of:

a) the bowl inlet pipe;

b) the bowl;

c) the downcomer pipe;

d) the trough inflow pipe;

e) the bottom centerline of the trough; and

f) any combination of a) through e).

49. The apparatus of claim 47, wherein thermocouples are placed in one or more locations where at least one glass defect caused by a flow of glass in proximity of the thermocouples ends up in at least one unusable bead at each end of the formed glass sheet.

50. The apparatus of claim 47, wherein an offset angle of at least one thermocouple from a centerline of the trough ranges from 150 to 210 degrees.

51. The apparatus of claim 50, wherein the offset angle of at least one thermocouple from a centerline of the trough is approximately 180 degrees.

52. The apparatus of claim 47, wherein an offset angle of at least one thermocouple from a centerline of the trough is ranges from 30 to 60 degrees.

53. The apparatus of claim 52, wherein the offset angle of at least one thermocouple from a centerline of the trough is 45 degrees.

54. The apparatus of claim 47, wherein the thermocouple is located on a bottom longitudinal centerline of the trough.

55. The apparatus of claim 47, wherein a the thermocouple is imbedded in a floor of the trough.

56. The apparatus of claim 55, wherein imbedding the thermocouple in the floor of the trough comprises the steps of:

a) placing at least one slot in the floor of the trough;

b) placing a thermocouple in each of the slots; and

c) sealing the thermocouples into the floor of the trough.

57. The apparatus of claim 47, wherein the thermocouple is included in an instrumentation assembly.

58. The apparatus of claim 57, wherein the instrumentation assembly is secured to a floor of the trough at a longitudinal centerline of the floor.

59. The apparatus of claim 57, wherein the thermocouple projects into a stream of glass.

60. The apparatus of claim 57, wherein a cross-section of the instrumentation assembly is uniform in a longitudinal direction.

61. A method for manufacturing glass sheets using an apparatus that includes a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, wherein the method comprises the step of:

measuring a temperature of the molten glass as the molten glass travels through the apparatus, wherein the temperature is measured by at least one thermocouple, wherein the thermocouple is immersed in at least one location directly in a path of molten glass flow, and wherein the location of the thermocouple is such that the thermocouple does not have an adverse effect on a quality of a finished glass sheet.

62. The method of claim 61, wherein the apparatus further comprises a bowl inlet pipe for receiving molten glass from a stirring device, a bowl for receiving the molten glass from the bowl inlet pipe, a downcomer pipe for receiving the molten glass from the bowl, and a trough inflow pipe for receiving the molten glass from the downcomer pipe, wherein the trough inflow pipe delivers molten glass to the trough, wherein the location of the thermocouple is selected from the group consisting of:

a) the bowl inlet pipe;

b) the bowl;

c) the downcomer pipe;

d) the trough inflow pipe;

e) a bottom centerline of the trough; and

f) any combination of a) through e).

63. The method of claim 61, wherein thermocouples are placed in one or more locations where at least one glass defect caused by a flow of glass in proximity of the thermocouple ends up in at least one unusable bead at either end of the formed glass sheet.

64. The method of claim 61, wherein an offset angle of at least one thermocouple from a centerline of the trough ranges from 150 to 210 degrees.

65. The method of claim 64, wherein the offset angle of at least one thermocouple from a centerline of the trough is approximately 180 degrees.

66. The method of claim 61, wherein an offset angle of at least one thermocouple from a centerline of the trough ranges from 30 to 60 degrees.

67. The method of claim 66, wherein the offset angle of at least one thermocouple from a centerline of the trough is 45 degrees.

68. The method of claim 61, wherein the thermocouple is located on a bottom longitudinal centerline of the trough.

69. The method of claim 61, further comprising the step of imbedding at least one thermocouple in a floor of the trough.

70. The method of claim 69, wherein the imbedding step comprises the substeps of:

a) placing at least one slot in the floor of the trough;

b) placing a thermocouple in each of the slots; and

c) sealing the thermocouples into the floor of the trough.

71. The method of claim 61, wherein the thermocouple is included in an instrumentation assembly.

72. The method of claim 71, wherein the method further comprises the step of securing the instrumentation assembly to a floor of the trough at a longitudinal centerline of the floor

73. The method of claim 71, wherein the thermocouple projects into a stream of glass.

74. The method of claim 71, wherein a cross-section of the instrumentation assembly is uniform in a longitudinal direction.

75. An improved apparatus for forming sheet glass, wherein the apparatus includes a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, and wherein the improvement comprises:

a) at least one inlet end support block located at an inlet end of the trough, wherein the inlet end support block is positioned at a bottom end of the trough and supports the trough;

b) at least one far end support block located at an opposite end of the trough as the inlet end support block, wherein the far end support block is positioned at the bottom end of the trough and supports the trough;

c) an inlet end adjustment screw, wherein the inlet end adjustment screw restrains the inlet end support block in a longitudinal direction; and

d) a far end force motor, wherein the far end force motor applies a force to the far end support block such that a bottom of the far end of the trough is deformed, by thermal creep, in a longitudinal direction;

wherein the inlet end adjustment screw is periodically adjusted to apply a force to the inlet end support block such that a bottom of the inlet end of the trough is deformed, by thermal creep, in an equal and opposite longitudinal direction to the deformation at the far end of the trough;

such that any deformation of the forming trough that results from thermal creep has a minimal effect on a thickness variation of the glass sheet.

76. A method for manufacturing glass sheets using an apparatus that includes a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge, at least one inlet end support block located at an inlet end of the trough, wherein the inlet end support block is positioned at a bottom end of the trough and supports the trough, at least one far end support block located at an opposite end of the trough as the inlet end support block, wherein the far end support block is positioned at the bottom end of the trough and supports the trough, such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, wherein the method comprises the step of:

a) applying a force to the far end support block to deform, by thermal creep, a bottom of a far end of the trough in a longitudinal direction; and

b) applying a force to the inlet end support block to deform, by thermal creep, a bottom of the inlet end of the trough in an equal and opposite longitudinal direction to the deformation of the far end;

such that any deformation of the forming trough that results from thermal creep has a minimal effect on a thickness variation of the glass sheet.

77. The method of claim 76, wherein step a) includes the substep of periodically adjusting an inlet end adjustment screw to apply a force to the inlet end support block..

78. The method of claim 76, wherein application of the force in step b) is accomplished using a far end force motor, wherein the far end force motor applies a force to the far end support block.

79. An improved apparatus for forming sheet glass, wherein the apparatus includes a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, and wherein the improvement comprises:

a) at least one inlet end structure located at an inlet end of the trough, wherein the inlet end structure supports a weight of the trough; and

b) at least one far end structure located at an opposite end of the trough as the inlet end structure, wherein the far end structure supports the weight of the trough;

wherein the inlet end structure and the far end structure are shaped to distribute force in the trough to counteract the effect of the weight of the trough such that an applied force puts the bottom of the trough under substantially equal compression stress in a longitudinal direction;

such that any deformation of the forming trough that results from thermal creep has a minimal effect on a thickness variation of the glass sheet.

80. The apparatus of claim 79, wherein the far end structure comprises:

a) at least one free-floating far end compression block, wherein an far end compression force is applied to a bottom of the trough by the free-floating far end compression block; and

b) at least one adjustable far end force motor, wherein the far end force motor generates the far end compression force.

81. The apparatus of claim 80, wherein the far end force motor is selected from the group consisting of an adjustable spring; an air cylinder; a hydraulic cylinder; an electric motor; and a weight and lever system.

82. The apparatus of claim 80, further comprising a cage connected to the inlet end structure, wherein the cage applies a force to the inlet end structure and mounts to the far end force motor to apply an equal and opposite force to the far end structure.

83. The apparatus of claim 82, wherein the cage comprises a low friction support such that the cage is free to move in a horizontal direction.

84. The apparatus of claim 80, wherein the inlet end structure comprises:

a) at least one free-floating inlet compression block, wherein an inlet end compression force is applied to a bottom of the trough by the free-floating inlet compression block; and

b) at least one adjustable inlet end force motor, wherein the inlet end force motor generates the inlet end compression force.

85. The apparatus of claim 84, wherein the inlet end force motor is selected from the group consisting of an adjustable spring; an air cylinder; a hydraulic cylinder; an electric motor; and a weight and lever system.

86. The apparatus of claim 84, further comprising at least one key between each of the free-floating compression blocks and the trough, wherein the keys insure correct alignment of the free-floating compression blocks to the trough.

87. The apparatus of claim 84, wherein the free-floating far end compression block is set at an angle to horizontal.

88. The apparatus of claim 84, wherein the free-floating inlet end compression block is set at an angle to horizontal.

89. The apparatus of claim 84, further comprising a top end force motor, wherein the top end force motor is located at a top end of the far end of the trough.

90. The apparatus of claim 89, wherein the top end force motor is selected from the group consisting of an adjustable spring; an air cylinder; a hydraulic cylinder; an electric motor; an adjustment screw; and a weight and lever system.

91. The apparatus of claim 84, further comprising a chamfer located between a bottom of the wedge and a bottom edge of the free-floating inlet compression block.

92. The apparatus of claim 84, further comprising a chamfer located between a bottom of the wedge and a bottom edge of the free-floating far end compression block.

93. The apparatus of claim 79, wherein at least one force on the inlet end of the trough is not equal to at least one force on the opposite end of the trough as the inlet end structure.

94. The apparatus of claim 79, further comprising a force motor located at the top end of the far end, wherein the force motor generates a constant sealing force for a glass seal between the inflow pipe and the trough.

95. The apparatus of claim 94, wherein the top end force motor is selected from the group consisting of an adjustable spring; an air cylinder; a hydraulic cylinder; an electric motor; an adjustment screw; and a weight and lever system.

96. The apparatus of claim 79, further comprising an inlet end adjustment screw, wherein the inlet end adjustment screw restrains the inlet end structure in a longitudinal direction.

97. The apparatus of claim 79, further comprising a force motor located on the inflow pipe, wherein the force motor generates a constant sealing force for a glass seal between the inflow pipe and the trough.

98. The apparatus of claim 97, wherein the top end force motor is selected from the group consisting of an adjustable spring; an air cylinder; a hydraulic cylinder; an electric motor; an adjustment screw; and a weight and lever system.

99. A method for manufacturing glass sheets using an apparatus that includes a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, wherein the method comprises the step of:

applying a substantially equal and opposite compression force to each end of a bottom of the trough such that any deformation of the forming trough that results from thermal creep has a minimal effect on a thickness variation of the glass sheet.

100. The method of claim 99, wherein the compression forces are independent of each other at each end.

101. An improved apparatus for forming sheet glass, wherein the apparatus includes an inflow pipe for delivering molten glass, a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the

downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, and wherein the improvement comprises:

a downcomer pipe connected to an end of the inflow pipe opposite the trough, wherein a centerline of the downcomer pipe is not centered with a centerline of the inflow pipe.

102. The apparatus of claim 101, wherein a bottom of the downcomer pipe is cut at an angle to a centerline of the downcomer pipe.

103. An improved apparatus for forming sheet glass, wherein the apparatus includes an inflow pipe for delivering molten glass, a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, and wherein the improvement comprises:

a downcomer pipe connected to an end of the inflow pipe opposite the trough, wherein a bottom of the downcomer pipe is cut at an angle to a centerline of the downcomer pipe.

104. An improved apparatus for forming sheet glass, wherein the apparatus includes a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, and wherein the improvement comprises:

a) at least one inlet end support block located at an inlet end of the trough, wherein the inlet end support block supports the trough;

b) an inlet end glass seal structure which affects a glass seal between the inflow pipe and the inlet end of the trough;

c) at least one far end support block located at an opposite end of the trough as the inlet end support block, wherein the far end support block supports the trough;

d) a robust structure restraining an inlet end adjustment screw, wherein the inlet end adjustment screw restrains the inlet end support block in a longitudinal direction; and

e) a far end force motor, wherein the far end force motor applies a force to the far end support block such that a bottom of the far end of the trough is deformed, by thermal creep, in a longitudinal direction;

wherein the inlet end glass seal structure is designed to be weak in the longitudinal direction such that, as the far end of the trough deforms by thermal creep, the glass seal structure does not absorb significant horizontal force from the adjustment screw;

such that any deformation of the forming trough that results from thermal creep has a minimal effect on a thickness variation of the glass sheet.

105. An improved apparatus for forming sheet glass, wherein the apparatus includes an inflow pipe for delivering molten glass, a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, and wherein the improvement comprises:

a downcomer pipe inserted vertically downward into a top of the inflow pipe opposite the trough, wherein the inlet pipe comprises at least one radial extension, which produces a controlled vortex flow of at least a portion of a glass stream exiting the downcomer pipe, directing at least a portion of the glass stream into a specific location.

106. The apparatus of claim 105, wherein the inlet pipe comprises a plurality of curved radial extensions, wherein the curved extensions project away from the downcomer pipe.

107. The apparatus of claim 106, wherein each of the curved extensions divides a single vortex of glass flow into two vortices such that glass exiting the vortices is directed to at least one unusable edge of the sheet.

108. The apparatus of claim 106, wherein the curved extensions comprise three extensions.

109. The apparatus of claim 106, wherein the curved extensions comprise two extensions.

110. The apparatus of claim 105, wherein the bottom of the downcomer pipe is submerged in a glass free surface in the inflow pipe.

111. The apparatus of claim 105, wherein the bottom of the downcomer pipe is partially submerged in a glass free surface in the inflow pipe.

112. The apparatus of claim 105, wherein the bottom of the downcomer pipe is located substantially above a glass free surface in the inflow pipe.

113. A method for manufacturing glass sheets using an apparatus that includes an inflow pipe for delivering molten glass received from a downcomer pipe connected to an end of the inflow pipe opposite the trough, a trough for receiving molten glass that has sides attached to a wedged shaped sheet forming structure that has downwardly sloping sides converging at the bottom of the wedge such that a glass sheet is formed when molten glass flows over the sides of the trough, down the downwardly sloping sides of the wedged shaped sheet forming structure and meets at the bottom of wedge, wherein the method comprises the step of:

moving the inflow pipe relative to the downcomer pipe such that the downcomer pipe is not centered with a centerline of the inflow pipe, which alters a flow path of at least a portion of a molten glass stream, and produces a controlled vortex flow of at least a portion of

the glass stream exiting the downcomer pipe, directing at least a portion of the glass stream into a specific location.